

What is claimed is:

1. A floating drive on dry dock comprising  
a flexible deck defining a craft receiving surface,  
5 at least two variable buoyancy flotation cells located below the deck,  
each of the cells having a lower portion and an upper portion,  
an opening in the lower portion of each floatation cell,  
in each cell an inlet riser having an outlet in an upper portion of the cell,  
a feeder line positioned below the upper portions of the cells and connected to  
10 the inlet risers,  
a source of air at super-atmospheric pressure,  
a source of water at super-atmospheric pressure,  
a first valve connecting the air source to the feeder line,  
a second valve connecting the water source to the feeder line, and  
15 a third valve connecting the feeder line to the atmosphere.
2. The dry dock of claim 1 in which the inlet risers extend from the lower  
portion to the upper portion of each floatation cell.
- 20 3. The dry dock of claim 2 in which the inlet risers are located within the  
floatation cells.

4. The dry dock of claim 1 wherein the deck has an aft end and a forward end, the craft receiving surface includes a path extending from the aft end toward the forward end, and the dock further includes a beam extending transverse to the path, the beam being secured to the deck to limit its flexing in one direction.

5. The dry dock of claim 3 wherein the beam includes the at least two variable buoyancy floatation cells

6. The dry dock of claim 1 where in the first, second and third valves are combined in a single housing.

7. The dry dock of claim 1 wherein the deck is formed of floatation cells that are substantially cubic and connected to each other with flexible tabs extending from the vertical edges of the cubes.

8. The dry dock of claim 4 wherein the floatation cells are rigid and hollow, and wherein the beam includes a plurality of the floatation cells.

9. The dry dock of claim 8 wherein the deck is formed of a rectangular array of air-tight floatation cells and the beam extends across the width of the deck.

10. The dry dock of claim 5 including at least two beams.

11. The dry dock of claim 10 including at least one valve for selectively connecting one or the other of the beams to the source of air, to the source of water, or to the atmosphere.

12. A method of dry docking a boat including the steps of providing a dock having a flexible deck and at least two variable buoyancy floatation cells located below the deck, each cell having an inlet riser extending from its lower portion toward its upper portion and an opening in a lower portion of each cell in communication with the surrounding water, the dock further including a single feeder line connected to all of the risers, driving a boat onto the deck while the floatation units are in a relatively less buoyant condition, forcing water out of the cells by forcing air through the feeder line and into the cells to increase the cells' buoyancy, and thereafter filling the feeder line and risers with water.

13. The method of claim 12 wherein the step of forcing water out of the cells includes forcing the water out through the opening in a lower portion of each cell.

14. A floating drive on dry dock having a flexible deck and at least two variable buoyancy floatation cells mounted below the deck, a manifold connected to the cells, a supply of air selectively connected to the manifold to adjust the buoyancy of the cells, and means for back filling the manifold with water to isolate the cells from each other.

15. A variable buoyancy beam for use with a floating drive on dry dock; the beam including a plurality of cells connected to each other and each having an upper portion and a lower portion, a drain hole in the lower portion of at least two of the cells; a feeder line disposed below the upper portion of the cells; inlet risers connected to the feeder line and extending into the cells; a source of air under pressure selectively connectable to the feeder line; and restriction means for assuring that, when the source of air is connected to the feeder line, water is displaced from cells with drain holes substantially uniformly.

16. The beam of claim 15 wherein the restriction means includes a drain hole in the cells sized to dampen the flow of water out of the cell

17. The beam of claim 15 wherein the restriction means includes the inlet risers having a smaller cross section for flow than the feeder line.

18. The beam of claim 16 wherein the restriction means includes the inlet risers having a smaller cross section for flow than the feeder line.

19. The beam of claim 16 further including a source of water under pressure selectively connectable to the feeder line.

20. A floating drive on dry dock including a plurality of beams as set forth in claim 19.

21. The dry dock of claim 20 wherein the dry dock includes a deck formed of closed floatation cells flexibly connected to each other.

22. The dry dock of claim 20 including valves selectively operable to connect the source of air under pressure to each of the beams.